

**WHAT IS CLAIMED IS:**

1. A multidimensional database control system, comprising:  
a data storage unit for storing layer rule definition data, layer structure definition  
5 data, database data, input data, layer structure information and layer rule;  
a layer rule management unit connected to said data storage unit for managing the  
layer rule based upon the layer rule definition data;  
a layer structure information management unit connected to said data storage unit  
and said layer rule management unit for managing the layer structure information based  
10 upon the layer structure definition data;  
a multidimensional database management unit connected to said data storage unit  
for inputting the input data in the database data; and  
a layer structure information update unit connected to said layer structure  
information management unit and said multidimensional database management unit for  
15 receiving a command to generate layer information for the input data and for registering  
the layer information at the layer structure information, wherein said multidimensional  
database management unit enters the input data based upon the layer information.
2. The multidimensional database control system according to claim 1 wherein  
20 the layer rule includes rules for character-row converting a name of the member and for  
generating the layer information.
3. The multidimensional database control system according to claim 2 wherein  
the rules are expressed in formal expressions.
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4. The multidimensional database control system according to claim 1 wherein  
the layer rule includes a name of a file and descriptions of a predetermined format, the file  
containing predetermined rules for generating the corresponding layer information.

5. The multidimensional database control system according to claim 4 wherein said layer structure information update unit accesses the file to obtain the predetermined rules.

5           6. The multidimensional database control system according to claim 1 wherein the layer rule includes a name of a database and descriptions of a predetermined format, the database containing predetermined rules for generating the corresponding layer information.

10           7. The multidimensional database control system according to claim 6 wherein layer structure information update unit accesses the database to obtain the predetermined rules.

15           8. The multidimensional database control system according to claim 1 wherein said layer structure information management unit determines whether or not the layer structure information exists, in the absence of the layer structure information, said layer structure information management unit generating the layer structure information that represents the input data in the multidimensional database.

20           9. The multidimensional database control system according to claim 1 wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules, said layer structure information management unit generating the layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules, said layer structure information management unit determining whether or not the layer  
25 information is successfully generated.

10. The multidimensional database control system according to claim 1 further comprising an input unit connected to said layer structure information management unit for inputting the input data, said layer structure information management unit returning the  
30 layer information to said input unit subsequent to registering the layer information.

11. A multidimensional database control method, comprising the steps of:  
storing layer rule definition data, layer structure definition data, database data,  
input data, layer structure information and layer rule for a multidimensional database;  
5 maintaining the layer rule based upon the layer rule definition data;  
maintaining the layer structure information based upon the layer structure  
definition data;  
inputting the input data in the database data;  
generating layer information for the input data based upon the layer rule, the input  
10 data and the layer structure information;  
registering the layer information at the layer structure information; and  
entering the input data in the multidimensional database based upon the layer  
structure information.

12. The multidimensional database control method according to claim 11  
15 wherein the layer rule includes rules for character-row converting a name of the member  
and for generating the layer information.

13. The multidimensional database control method according to claim 12  
20 wherein the rules are expressed in formal expressions.

14. The multidimensional database control method according to claim 11  
wherein the layer rule includes a name of a file and descriptions of a predetermined format,  
the file containing predetermined rules for generating the corresponding layer information.  
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15. The multidimensional database control method according to claim 14 further  
comprising a step of accessing the file to obtain the predetermined rules.

16. The multidimensional database control method according to claim 11  
30 wherein the layer rule includes a name of a database and descriptions of a predetermined

format, the database containing predetermined rules for generating the corresponding layer information.

17. The multidimensional database control method according to claim 16 further  
5 comprising a step of accessing the database to obtain the predetermined rules.

18. The multidimensional database control method according to claim 11 further  
comprising a step of determining whether or not the layer structure information exists, in  
the absence of the layer structure information, generating the layer structure information  
10 that represents the input data in the multidimensional database.

19. The multidimensional database control method according to claim 11  
wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules  
and further comprising additional steps of:  
15 generating the layer information according to a sequential application of the main  
layer rule and the plurality of the sub-layer rules; and  
determining whether or not the layer information is successfully generated.

20. The multidimensional database control method according to claim 11 further  
20 comprising additional steps of:  
inputting the input data; and  
returning the layer information subsequent to registering the layer information.

21. A computer program for managing a multidimensional database, performing  
25 the steps of:  
storing layer rule definition data, layer structure definition data, database data,  
input data, layer structure information and layer rule for a multidimensional database;  
maintaining the layer rule based upon the layer rule definition data;  
maintaining the layer structure information based upon the layer structure  
30 definition data;

inputting the input data in the database data;  
generating layer information for the input data based upon the layer rule, the input data and the layer structure information;  
registering the layer information at the layer structure information; and  
5 entering the input data in the multidimensional database based upon the layer structure information.

10 22. The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes rules for character-row converting a name of the member and for generating the layer information.

23. The computer program for managing a multidimensional database according to claim 22 wherein the rules are expressed in formal expressions.

15 24. The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes a name of a file and descriptions of a predetermined format, the file containing predetermined rules for generating the corresponding layer information.

20 25. The computer program for managing a multidimensional database according to claim 24 further comprising a step of accessing the file to obtain the predetermined rules.

25 26. The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes a name of a database and descriptions of a predetermined format, the database containing predetermined rules for generating the corresponding layer information.

27. The computer program for managing a multidimensional database according to claim 26 further comprising a step of accessing the database to obtain the predetermined rules.

5           28. The computer program for managing a multidimensional database according to claim 21 further comprising a step of determining whether or not the layer structure information exists, in the absence of the layer structure information, generating the layer structure information that represents the input data in the multidimensional database.

10           29. The computer program for managing a multidimensional database according to claim 21 wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules and further comprising additional steps of:

generating the layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules; and

15           determining whether or not the layer information is successfully generated.

30. The computer program for managing a multidimensional database according to claim 21 further comprising additional steps of:

inputting the input data; and

20           returning the layer information subsequent to registering the layer information.